

# NOWCASTING REPORT

Updated: June 15, 2018

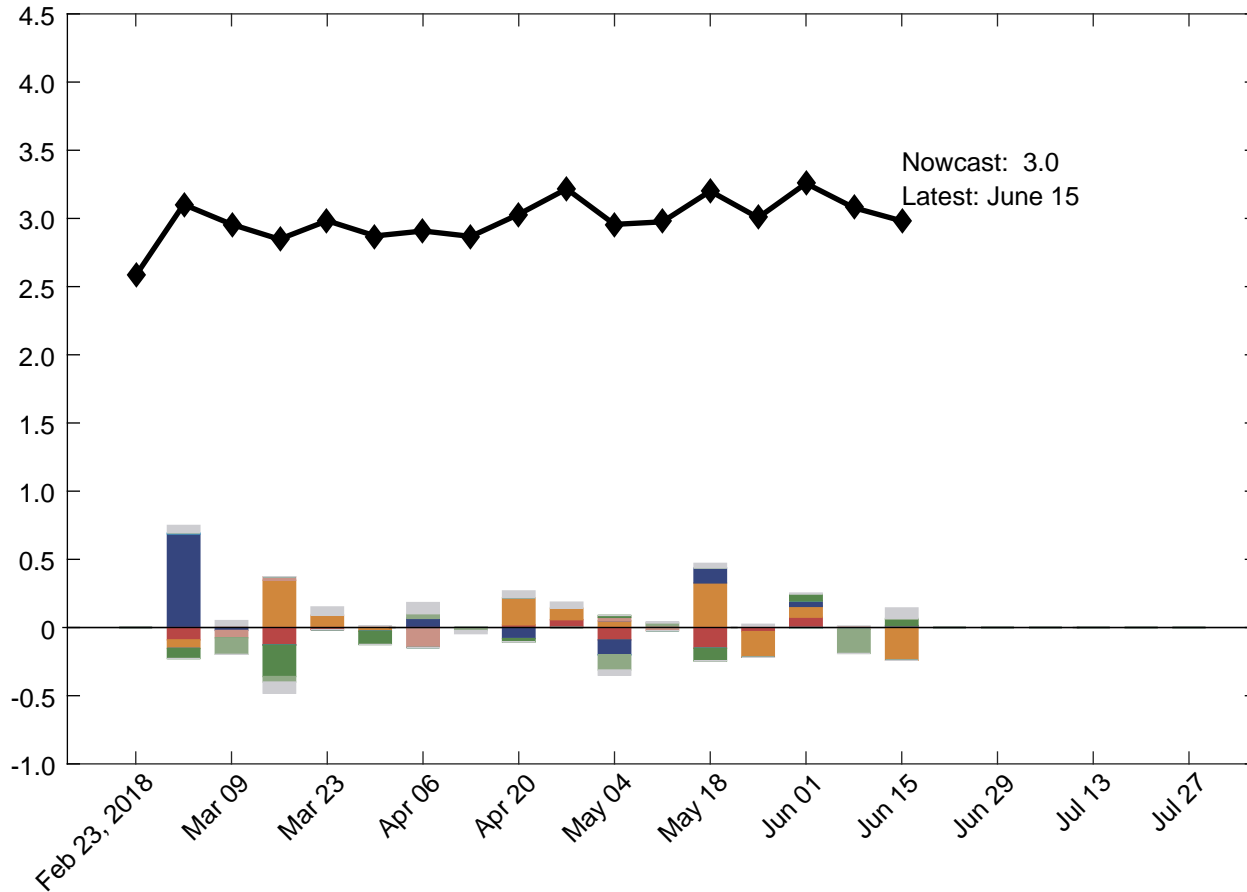
- The New York Fed Staff Nowcast stands at 3.0% for 2018:Q2 and 2.8% for 2018:Q3.
- News from this week's data releases decreased the nowcast for both quarters by 0.1 percentage point.
- Negative surprises from industrial production and capacity utilization data outweighed positive surprises from producer prices, retail sales, and the Empire State Manufacturing survey.

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The New York Fed Staff Nowcast is not an official forecast of the Federal Reserve Bank of New York, its president, the Federal Reserve System, or the Federal Open Market Committee (FOMC).

# 1 | 2018:Q2 GDP Growth

Percent (annual rate)



## Key

◆ New York Fed Staff Nowcast

## Data Releases

- Housing and construction
- Manufacturing
- Surveys
- Retail and consumption
- Income
- Labor
- International trade
- Others

Source: Authors' calculations, based on data accessed through Haver Analytics.

Note: Colored bars reflect the impact of each data release on the nowcast.

# 1.1 | Nowcast Detail

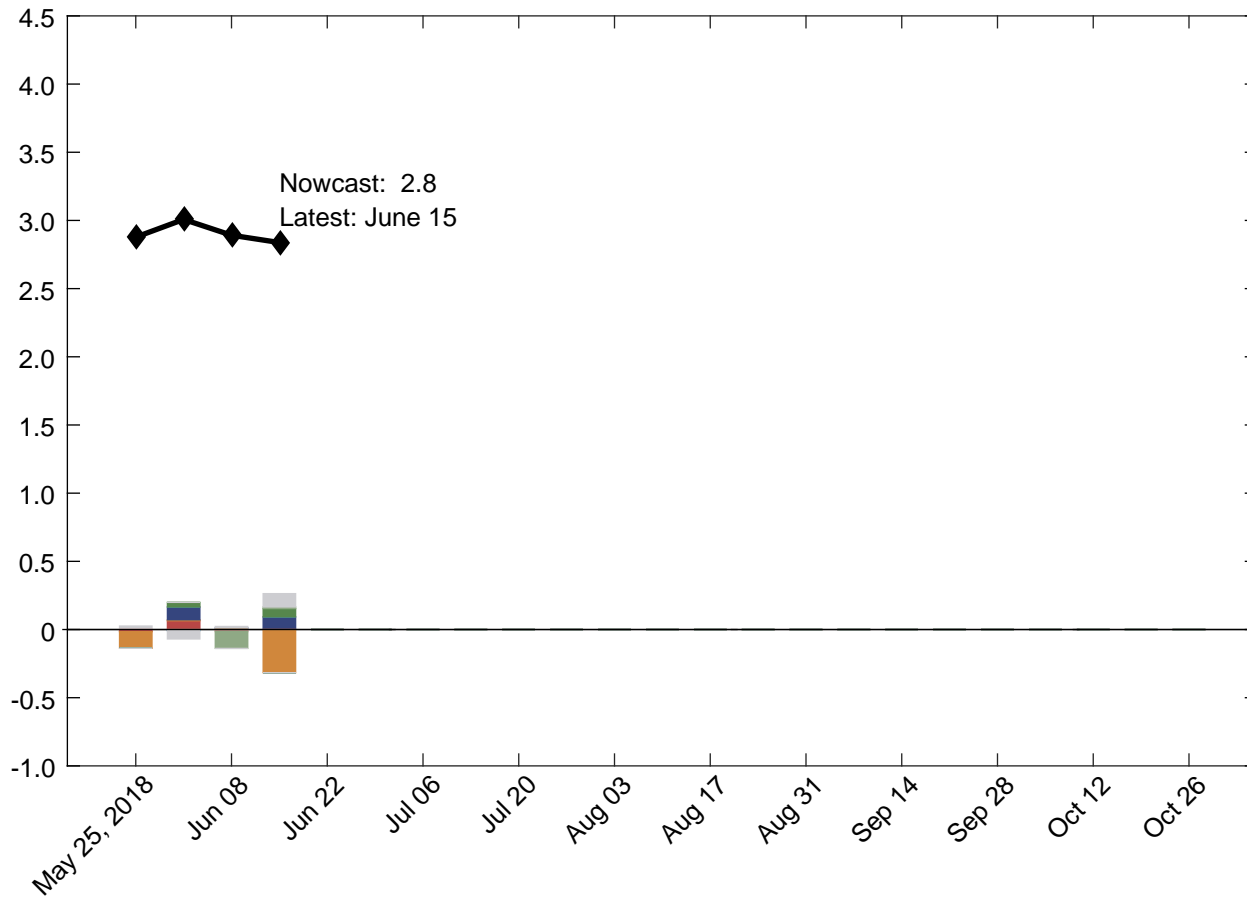
<span style="color: #c00000;">■</span> Housing and construction <span style="color: #e69d00;">■</span> Manufacturing <span style="color: #000080;">■</span> Surveys <span style="color: #008000;">■</span> Retail and consumption <span style="color: #00b0f0;">■</span> Income <span style="color: #a52a2a;">■</span> Labor <span style="color: #6aa84f;">■</span> International trade <span style="color: #cccccc;">■</span> Others													
Update	Release Date	Data Series	Reference Period	Units	Forecast	Actual	Weight	Impact	Nowcast GDP Growth				
					[a]	[b]	[c]	[c(b - a)]					
May 18	10:00 AM May 23	<span style="color: #c00000;">■</span> New single family houses sold	Apr	MoM % chg.	0.855	-1.49	0.013	-0.030	<b>3.20</b>				
	8:30 AM May 25	<span style="color: #e69d00;">■</span> Manufacturers' new orders: Durable goods	Apr	MoM % chg.	0.678	-1.66	0.022	-0.052					
	8:30 AM May 25	<span style="color: #e69d00;">■</span> Manufacturers' shipments: Durable goods	Apr	MoM % chg.	0.857	-0.059	0.131	-0.120					
	8:30 AM May 25	<span style="color: #e69d00;">■</span> Mfrs.' unfilled orders: All manufacturing industries	Apr	MoM % chg.	0.656	0.482	-0.027	0.005					
	8:30 AM May 25	<span style="color: #e69d00;">■</span> Manufacturers' inventories: Durable goods	Apr	MoM % chg.	0.235	0.291	-0.368	-0.021					
		<span style="color: #cccccc;">■</span> Data revisions						0.024					
May 25	8:05 AM May 30	<span style="color: #c00000;">■</span> ADP nonfarm private payroll employment	May	Level chg. (thousands)	193.6	178.0	1.013*	-0.016	<b>3.01</b>				
	8:30 AM May 30	<span style="color: #e69d00;">■</span> Merchant wholesalers: Inventories: Total	Apr	MoM % chg.	0.441	0.024	-0.190	0.079					
	8:30 AM May 30	<span style="color: #cccccc;">■</span> Real gross domestic income	Q1	QoQ % chg. AR	2.56	2.77	0.012	0.003					
	8:30 AM May 31	<span style="color: #000080;">■</span> Real disposable personal income	Apr	MoM % chg.	0.245	0.188	0.029	-0.002					
	8:30 AM May 31	<span style="color: #cccccc;">■</span> PCE less food and energy: Chain price index	Apr	MoM % chg.	0.148	0.157	0.238	0.002					
	8:30 AM May 31	<span style="color: #cccccc;">■</span> PCE: Chain price index	Apr	MoM % chg.	0.118	0.222	0.141	0.015					
	8:30 AM May 31	<span style="color: #008000;">■</span> Real personal consumption expenditures	Apr	MoM % chg.	0.202	0.354	0.338	0.051					
	8:30 AM Jun 01	<span style="color: #c00000;">■</span> All employees: Total nonfarm	May	Level chg. (thousands)	195.2	223.0	0.323*	0.009					
	8:30 AM Jun 01	<span style="color: #c00000;">■</span> Civilian unemployment rate	May	Ppt. chg.	-0.029	-0.100	-0.114	0.008					
	10:00 AM Jun 01	<span style="color: #000080;">■</span> ISM mfg.: Pmi composite index	May	Index	58.3	58.7	0.053	0.023					
	10:00 AM Jun 01	<span style="color: #000080;">■</span> ISM mfg.: Prices index	May	Index	78.0	79.5	0.007	0.011					
	10:00 AM Jun 01	<span style="color: #c00000;">■</span> Value of construction put in place	Apr	MoM % chg.	-0.441	1.84	0.033	0.076					
	10:00 AM Jun 01	<span style="color: #000080;">■</span> ISM mfg.: Employment index	May	Index	56.0	56.3	0.021	0.005					
			<span style="color: #cccccc;">■</span> Data revisions								-0.012		
Jun 01	10:00 AM Jun 04	<span style="color: #e69d00;">■</span> Inventories: Total business	Apr	MoM % chg.	0.313	0.302	-0.159	0.002	<b>3.26</b>				
	10:00 AM Jun 05	<span style="color: #c00000;">■</span> JOLTS: Job openings: Total	Apr	Level chg. (thousands)	-123.6	65.0	-0.069*	-0.013					
	10:00 AM Jun 05	<span style="color: #000080;">■</span> ISM nonmanufacturing: NMI composite index	May	Index	58.1	58.6	0.007	0.004					
	9:00 AM Jun 06	<span style="color: #008000;">■</span> Exports: Goods and services	Apr	MoM % chg.	0.965	0.278	0.075	-0.052					
	9:00 AM Jun 06	<span style="color: #008000;">■</span> Imports: Goods and services	Apr	MoM % chg.	1.98	-0.165	0.059	-0.126					
		<span style="color: #cccccc;">■</span> Data revisions						0.006					
Jun 08	8:40 AM Jun 12	<span style="color: #cccccc;">■</span> CPI-U: All items	May	MoM % chg.	0.248	0.209	0.086	-0.003	<b>3.08</b>				
	8:40 AM Jun 12	<span style="color: #cccccc;">■</span> CPI-U: All items less food and energy	May	MoM % chg.	0.147	0.171	0.110	0.003					
	8:30 AM Jun 13	<span style="color: #cccccc;">■</span> PPI: Final demand	May	MoM % chg.	0.184	0.519	0.105	0.035					
	8:30 AM Jun 14	<span style="color: #008000;">■</span> Retail sales and food services	May	MoM % chg.	0.639	0.827	0.244	0.046					
	8:30 AM Jun 14	<span style="color: #008000;">■</span> Import price index	May	MoM % chg.	0.673	0.629	0.020	-0.001					
	8:30 AM Jun 14	<span style="color: #008000;">■</span> Export price index	May	MoM % chg.	0.443	0.630	0.039	0.007					
	8:30 AM Jun 15	<span style="color: #000080;">■</span> Empire State Mfg. Survey: General business conditions	Jun	Index	20.6	25.0	0.003	0.014					
	9:10 AM Jun 15	<span style="color: #e69d00;">■</span> Industrial production index	May	MoM % chg.	0.269	-0.092	0.276	-0.100					
	9:10 AM Jun 15	<span style="color: #e69d00;">■</span> Capacity utilization	May	Ppt. chg.	0.180	-0.203	0.367	-0.140					
			<span style="color: #cccccc;">■</span> Data revisions								0.043		
												<b>2.98</b>	

Source: Authors' calculations, based on data accessed through Haver Analytics.

Notes: MoM % chg. indicates month over month percentage change. QoQ % chg. indicates quarter over quarter percentage change. The weights with the asterisk are multiplied by 1,000 for legibility.

## 2 | 2018:Q3 GDP Growth

Percent (annual rate)



### Key

◆ New York Fed Staff Nowcast

### Data Releases

- Housing and construction
- Manufacturing
- Surveys
- Retail and consumption
- Income
- Labor
- International trade
- Others

Source: Authors' calculations, based on data accessed through Haver Analytics.

Note: Colored bars reflect the impact of each data release on the nowcast.

## 2.1 | Nowcast Detail

<span style="color: #c00000;">■</span> Housing and construction <span style="color: #e69d00;">■</span> Manufacturing <span style="color: #000080;">■</span> Surveys <span style="color: #008000;">■</span> Retail and consumption <span style="color: #0080c0;">■</span> Income <span style="color: #c00000;">■</span> Labor <span style="color: #008000;">■</span> International trade <span style="color: #cccccc;">■</span> Others												
Update	Release Date	Data Series	Reference Period	Units	Forecast	Actual	Weight	Impact	Nowcast GDP Growth			
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May 18	10:00 AM May 23	<span style="color: #c00000;">■</span> New single family houses sold	Apr	MoM % chg.	0.855	-1.49	0.007	-0.015	<b>2.99</b>			
	8:30 AM May 25	<span style="color: #e69d00;">■</span> Manufacturers' new orders: Durable goods	Apr	MoM % chg.	0.678	-1.66	0.014	-0.033				
	8:30 AM May 25	<span style="color: #e69d00;">■</span> Manufacturers' shipments: Durable goods	Apr	MoM % chg.	0.857	-0.059	0.089	-0.081				
	8:30 AM May 25	<span style="color: #e69d00;">■</span> Mfrs.' unfilled orders: All manufacturing industries	Apr	MoM % chg.	0.656	0.482	0.005	-0.001				
	8:30 AM May 25	<span style="color: #e69d00;">■</span> Manufacturers' inventories: Durable goods	Apr	MoM % chg.	0.235	0.291	-0.100	-0.006				
		<span style="color: #cccccc;">■</span> Data revisions						0.025				
May 25	8:05 AM May 30	<span style="color: #c00000;">■</span> ADP nonfarm private payroll employment	May	Level chg. (thousands)	193.6	178.0	2.558*	-0.040	<b>2.88</b>			
	8:30 AM May 30	<span style="color: #e69d00;">■</span> Merchant wholesalers: Inventories: Total	Apr	MoM % chg.	0.441	0.024	-0.017	0.007				
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	9:00 AM Jun 06	<span style="color: #008000;">■</span> Exports: Goods and services	Apr	MoM % chg.	0.965	0.278	0.053	-0.036				
	9:00 AM Jun 06	<span style="color: #008000;">■</span> Imports: Goods and services	Apr	MoM % chg.	1.98	-0.165	0.041	-0.087				
		<span style="color: #cccccc;">■</span> Data revisions					0.011					
Jun 08	8:40 AM Jun 12	<span style="color: #cccccc;">■</span> CPI-U: All items	May	MoM % chg.	0.248	0.209	0.159	-0.006	<b>2.89</b>			
	8:40 AM Jun 12	<span style="color: #cccccc;">■</span> CPI-U: All items less food and energy	May	MoM % chg.	0.147	0.171	0.195	0.005				
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	9:10 AM Jun 15	<span style="color: #e69d00;">■</span> Capacity utilization	May	Ppt. chg.	0.180	-0.203	0.483	-0.185				
			<span style="color: #cccccc;">■</span> Data revisions					0.041				
	Jun 15										<b>2.84</b>	

Source: Authors' calculations, based on data accessed through Haver Analytics.

Notes: MoM % chg. indicates month over month percentage change. QoQ % chg. indicates quarter over quarter percentage change. The weights with the asterisk are multiplied by 1,000 for legibility.

# Nowcasting Report Q&A

## 1. What is the ultimate goal of the exercise?

Our model produces a “nowcast” of GDP growth, incorporating a wide range of macroeconomic data as it becomes available. With this approach, we aim to read the real-time flow of information and evaluate its effects on current economic conditions. The platform provides a model-based counterpart to the more routine analysis at the bank, which has traditionally been based on expert knowledge.

## 2. What is the modeling strategy?

The platform employs Kalman-filtering techniques and a dynamic factor model. The approach has a number of desirable features. It is based on:

- a reliable big data framework that captures in a parsimonious way the salient features of macroeconomic data dynamics;
- a design that digests the data as “news,” mimicking the way markets work.

## 3. What are the input data? What has been driving the data selection?

We include all the market-moving indicators—the same data that are also constantly monitored by market participants and commentators.

## 4. Why should we trust the model?

Extensive back-testing of the model, research, and practical experience have shown that the platform is able to approximate best practices in macroeconomic forecasts. The model produces forecasts that are as accurate as, and strongly correlated with, predictions based on best judgment.

The methodology has been tested for accuracy in many countries, including large developed economies (the Euro area, Italy, France, Germany, Spain, the United Kingdom, Japan, and Canada), small open economies (Australia, Ireland, Belgium, New Zealand, the Czech

Republic, and Scotland), fast-growing economies (Brazil, Russia, India, China, and South Africa), and developing economies (Mexico, Indonesia, and Argentina).

## 5. How should we read the output of the model?

- The model produces forecasts for all variables taking into account their dynamic interactions.
- Since it is a fully specified dynamic model, the platform provides an intuitive reading of the incoming data as “news.”
- The difference between two consecutive forecasts (that is, the forecast revision) is the weighted average of the news during the week.
- News is defined as the difference between released data and model predictions. The weights account for the information content as well as the timeliness of the data releases.
- The contribution of new data to the forecast revision is reported in the two charts with colored bars. To make the charts easier to read, we grouped variables in a few broad categories. Detailed information about the composition of the groupings is provided in the accompanying tables.

## References

- *Banbura, M., D. Giannone, M. Modugno, and L. Reichlin.* 2013. “Nowcasting and the Real-Time Data Flow.” In G. Elliott and A. Timmermann, eds., *Handbook of Economic Forecasting*, Vol. 2. Amsterdam: Elsevier-North Holland.
- *Bok, B., D. Caratelli, D. Giannone, A. Sbordone, and A. Tambalotti.* 2017. “Macroeconomic Nowcasting and Forecasting with Big Data.” *Federal Reserve Bank of New York Staff Reports*, no. 830, November.
- *Giannone, D., L. Reichlin, and D. Small.* 2008. “Nowcasting: The Real-Time Informational Content of Macroeconomic Data.” *Journal of Monetary Economics* 55, no.4 (May): 665-76.

## **Nowcasting Report FAQs**

### **1. What is the schedule for reporting and updating the nowcast for each quarter?**

We start reporting the nowcast of GDP growth for a reference quarter one week after the publication of the second official GDP estimate for two quarters prior. For example, we began reporting the nowcast for 2017:Q2 on Friday, March 10, 2017, following the government's second estimate of 2016:Q4 GDP on Tuesday, February 28, 2017. We continue to update the nowcast for a reference quarter until the release of the advance GDP estimate, roughly one month after the end of the quarter. For 2017:Q2, this occurred on July 28, 2017, at which point we stopped updating the nowcast for this quarter. We retain the reference quarter's progression plot and detail table in the Nowcasting Report until the publication of the second GDP estimate, roughly two months after the end of the quarter. Following the second estimate of 2017:Q2 GDP on August 30, 2017, we removed 2017:Q2 from the Nowcasting Report and began reporting the nowcast for 2017:Q4.

### **2. What are the major conceptual differences between the New York Fed Staff Nowcast and the Atlanta Fed's Nowcast?**

The New York Fed Staff Nowcast and the Atlanta Fed's GDPNow are both based on statistical filtering techniques applied to a dynamic factor model. These techniques are very common in big data analytics since they effectively summarize the information contained in large data sets through a small number of common factors. The general framework for macroeconomic nowcasting has been developed in the academic literature over the past ten years, as discussed in the Q&A included in this report. The New York Fed Staff Nowcast is a straightforward application

of the most advanced techniques developed in this academic literature. GDPNow adapts these techniques to mimic the methods used by the BEA to estimate real GDP growth, as well explained by GDPNow's own FAQs.

Because GDPNow and the New York Fed Staff Nowcast are different models, they can generate different forecasts of real GDP growth. Our policy is not to comment on or interpret any differences between the forecasts of these two models.

### **3. Is the “annual rate” the y/y growth rate?**

No. We track the annualized quarterly (“q/q”) growth rate of real GDP, not the four-quarter (“y/y”) growth rate.

### **4. Can we obtain the data underlying this analysis?**

We are not making the underlying data available at this time. The tables list the data series employed in calculating our estimates. Sources include the U.S. Bureau of Labor Statistics, Institute for Supply Management, U.S. Census Bureau, U.S. Bureau of Economic Analysis, the New York and Philadelphia Feds, the Fed Board of Governors, and the ADP (Automatic Data Processing, Inc.).

### **Authors**

New York Fed Time-Series Analysis Team